Notebook Series -- Pocket Notebooks
Notebook, PN-16-11-15.2

The dated entries in this pocket notebook cover the period November 1916-February 1917. The book was used by Edison to record ideas about business matters, experiments to be tried, and other tasks to be performed. Some of the items have been crossed out and marked "Ent." Included are notes on chemical experiments, batteries, photochemistry, the sending of photographs by telephone, disc record composition, and the crushing of diamonds used in disc records. Also included are notes on military topics such as trench warfare, ship detection through acoustic range finding, luminous paint for ships, submarine and torpedo detection, and the prevention of saltwater corrosion of guns on military ships. In addition, there are entries regarding consultants and experts whom Edison wanted for war-related work.

The entries at the beginning of the book appear to be transcriptions of entries from PN-16-11-15.1. The last page contains a notation concerning Edison's agreement of July 22, 1915, with H. H. Meno Kammerhoff, supervisor of operations at his chemical plants in Silver Lake. Other Edison employees mentioned in the book are William W. Dinwiddie and Sherwood T. (Sam) Moore, principal assistants in the development of disc records; chief engineer Miller Reese Hutchison; and Walter H. Miller, head of the Recording Dept. The pages are unnumbered. Approximately 150 pages have been used.

PN-16-11-15.2 #2996

E-1697

1 Meter 39 37"

1 Centimeter .3937 of inch

2½ " to 1 inch

1 Millimeter .039 or $\frac{1}{25}$ of inch

25.4 " 1 inch

C13

Reducing Agent = Aqueous Alcoholic
Ammonium Sulphite – do Na Bisulphite

Chlorides in Alkali at ord temp on Electrolysis gives Hypochlorite, if Temp raised give Chlorate. Possibly in our battery the Chlorides act Catalytically + permits oxdg Ni – + if absolutely free of chlorides would not change – Also this would Explain why charging not give poor Capacity. only 1/2 Cap at 130°Fa Experiments should be made to test this + also to prevent formation of Chlorates.

A resin is formed when Cyanamide acts on Acetic Aldehyde – Phone

Nonaphthyl is a resin made by action of peroxide Mang + sulphuric acid on Benzol -
This should condense with b/f

Nitrocellulose + formaldehyde make a Varnish -

Hazzt iron shaped dip in condensate Vary + Condense -

Make Battery of Cobalt entirely so can Reverse + test both ways -

~~Precip Ni(OH)2 with just right amount NaOH, make 2 small test cells - then, put some more NiOH in NaOH & boil make 2 test cells & keep on making 2 test cells each time boiling in strong NaOH till NiOH is white or dead~~

Find most rapid catalytic agent for decomposing H_2O_2 so can put in battery -

Dehydrate $Ni(OH)_2$ by boiling in NaOH strong - after this find a solution or condition for hydrating it after this can be found think it will regenerate cells -

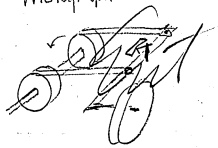
Find out what Bismuth really does in NiOH to make it so high Cap

Experiment to find a Soda Cousbon like the Potassium silicate Cousbon to increase Leclanche Capacity to dissolve Zinc -

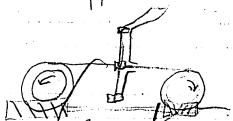
Also a substitute for Copper plate in Leclanche, higher Emf + Cheaper

Precip Bi + Ni, boil to Crystalize
the Bi - Crush + screen add Bi
Crystal, then see if Ni in last calls
OK

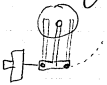
Motograph



balance friction away from Dia

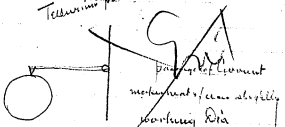


Another



For points on Motograph - Cadmium-Indium, Bridgeman - also Carborundum,

Tellurium point



Condenser, when Current Comm there is an attraction + movement of dia

Lelande - see if Ferrite or a metal can be found most in NaOH, also Plumbate, Manganate,

Storage battery - precip Ni & Zn hydroxes together no excess NaOH, Dry & percolate with excess NaOH to get Zinc out & leave porous Nickel
— ditto Al_2O_3 - Lead
It may be Pbi only functions this way to make porosity, & we get high results.

See how Zinc plates out of a K Silicate Zn Sol.

—

In Experiting to get a double Zinc salt for Leland Fully Organic material as well as inorganic.

Try a double sulphate of Iron & Zinc roast to red, then boil out ZnO by NaOH & reduce by H. There will be some ZnO left but there will prevent formation of a dense amalgam.

Make a series of iron sulfides mixed with Ba Sr Ca ele salts ignite to ferric, reduce in H, this finely divides iron & prevents Hg from making it dense.

Paint Violin strings with Nitrocellulose & Rosin if string wont stand it - Paint the bow itself -
also soak string or bow in Resynate Soda & precip resin by acid -
Treat strings or bow with formaldehyde.

Wax = bench - Funnel below water level, filled with water, later also 2 funnels, Mixed a filter's of Urlanquilcle for big quantity also deformation in velocity at a ground wave -

In Alkaline zinc reductions like Hydrazobenzene temp should be high enough to dissolve ZnO -

Have Mitchell by a small test cell that has been run for some time & has fixed capacity. Charge - put in 10% of bulk of H_2O_2 & let it stand for 10 hours then discharge. Have a Dup without H_2O_2

Edandi - Pack a lot of CuO plates in Bachmann smallest annealing boxes - pass cold H, then bring up to red & pass a very little H thru say enough to reduce 2% of the Copper. Pack so H must pass thru all plates. This to get rid of Zinc

Polished Copper plates, one slightly oxidized in flame - put in half sol. front part exposed to light, back plate shielded, gives current. Unoxidized plates also work. One exposed to light gradually turns red then purple - Even iron plates coated w/ cheap Copper carbonate paint. Even diffused sunlight works. Volt 0.1 Current 0.2 been obtained from cell containing 2 plates 6" apart - 1 oxidized other bright. NY Elec Soc June 14 1916 12 pages T W Case

Diazo Compounds are very sensitive to light, which induces phenolic decomposition, even when the action of heat water or acids is slight
Some Diazo Salts stable at 0 decompose at 10 Cent
This should give good photo for radiant heat in presence of something that would give a Color with the Diazo decomposition products See Chem Trans 1907 91-35, Soc Chem Ind 1890 9-1001 also for other Exceptional decompositions of Diazo Compounds Ber 1874-7-1061 1884-17-274 1896-69-1327 1902-35-89-
Chem Soc Trans 1896-69-1327 1902-81-77- 1905 87-5 1906-89-19.
Diazo salts are highly endothermic Explosive

Mannous Formate - good reducing agt
Formic Acid & Copper powder "
Hypophosphorous Acid "

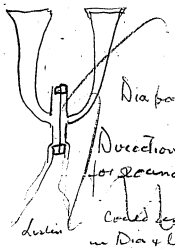
Dictionary of Applied Chem Vol 3 p 220
Diazotype Photography no Ag

Primuline - Diazo Process Photography by Grover Beckwith
Can get any color by using different developers - No Silver Salts

Paraphenylenediamin hydrochloride should be very sensitive as Bain recently prepared

Wireless Waves are reflected by Metals passed through insulators probably Can reflect waves back from by Broadcast.

Homatrophine (Belladonna)
Coated lens used in Eyes of
range finder when low
visibility - also for Ophthalmoscope
for submarines + aviators
all in daylight -



dia Diaphram - dog magnets
Expansion + Contraction
of Cores by magnetism
give vibrations to Dia

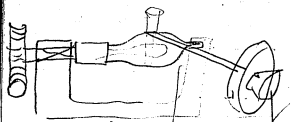
Thus sends waves into feeder
Use powerful make + break or
jump sparks - if too sluggish
use Electrostatic attraction
Want 200 000 per second

Send out photographic rays
in all directions just at edge
of blue. Then photographic
streamer by yellow green light
Whole screen by will depends
up powerful beam sent out
150 KW power. (1) Comet arc
Thursday 19/7

Send out sound waves say 256
+ get echo by using microphone +
tuned resonator

for positioning big gun use phonograph for air waves & also earth waves
a Piano board against Earth 10 or 15ft down or depth where possible - diff in velocity gives position, or 2 pieces board

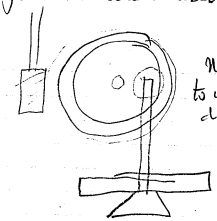
For listening out of phonograph second Mechanical gun use Wireless diaphragm



Microph with microscopic pump also spark lubr.
possibly ring of silver needs

Nov 15/1916

Photographs by Telephone
2 synchronous Cylinders
One has Disc Speaker 400 threads to inch - photo by gelatin process on cylinder
Recording end wax cylinder & engraving sapphire
passing of superposition of varying surface makes sound this is transmitted over telephones & recorded on phonograph - from this by plating matrix obtained from which patents are made -



Micrograph to use thin discs etc.

Semi suspensions
Clay – Ultramarine, Wheat Starch
Gum Mastic in Alcohol poured into
Copper Sol –

Non Reversible, Stannic acid

Reversible Colloids (Molybdic acid)
not Coagulated by Electrolytes
Glycogen | Dextrin. some dye
stuffs Tungstic acid Congo red
Arsenic Sulfide – Silica from Silicate
Soda free by dialysis, H_2SO_4 & Sol
Coagulates.

Ferrocyanide of Copper
Titanic acid.
Tungstic Acid is a most remarkable
Colloid – Not affected by anything
I found thus the only acid that
worked on Malographs

Colloidal Cu Sulfide
& many metallic sulfides

Gambooge Carmine (Dye)
Fluorescin, Uranine,
Fluorescent dye stuffs generally
Indulin – Violet blends
Aniline blue A dilute sol
of Scarlet in alcohol poured
into 6 pts water is precipitated
gives Brownian movement
shows separate particles in
Ultra Micro –

Dyes whose particles are too
small to be seen in Ultra Micro
Fluorescein Eosin, Methylene Blue
Bavarian Blue

Colloids – Benzopurpurin
Neutral Red, Capri blue
Picric Acid
Acidified Thiosulfate Solution

Twist E strong of Violin as far
as possible then tighten & test.

Noncrystallizers for Copper plating

Wool Navy blue B
Patent Blue
Bismarck Brown TD
" " R
Fuchsine -

Ferrichydrox Colloid carries a
Neg chg - attracted + deposited on
anode - Oxide Chromium,
Aluminum hydroxide Methylene blue
Bismarck Brown Haemoglobin
go to Negative pole,
Tanning, Caramel, Starch
go to Positive when in acid
Solution -

Hydrogen Indicator

Closed chamber & porous plug
put submarine air in under
3" water pressure + note time
it takes for pressure to
equalize - use porous porcelain
Try air, 1st then def % of H.

also time of loss of pressure
when air containing Hydrogen
passes out through a long
Capillary glass tube

Pass gas through liquid from
Capillary tube - note size of
bubbles or number per minute
on constant pressure

Pass air into globe with KOH +
pyrogallic acid - shake mix
& absorb Oxy NaOH left
what's left should show an
index excess of Hydrogen

Chamber — strip of palladium
Electrically heated after cleaning
of H heat and pass H showed
be absorbed in hydrate water
Column shown

Nitride forming overheaven
Capable of Electric heating
in closable chamber
pass in air heat + ~~[illegible]~~ N begins
after air passed over HCl + [illegible]
bal be H.

Receptable with side tube
Containing Chlorine & Sublimated
Close receptable + HCl formed
ditto HCl with [illegible] moist
paper changes color

Closed chamber — pass in air of boat
+ Extra H till it reaches
Explosive point — amount of
Extra H added is the measure
of safety. Or use current + Zinc
alloy modified fuse a spark
plug — Chamber [illegible] —
Read by water amount of H.
necessary to Explode

Naval — Molograph sound waves
250 000 sec — [illegible] very high speed
shutter breaking up into dotted
dashes, reduce speed of phono
to bring down to 4000 sec
to record sounds —

Wash Resinate of lead in
Alcohol to dissolve out
any Excess Rosin —

find out why Resinate lead makes
black surface when its pyrotechnic
mixture decomposes

Retest the 3 sets of records made with increased amounts of E/4

Use of Resinate Lead solution
Phenol also phenol & alcohol

Use ⅛ long bullett, respect to equal ¼ –

Ophthalmic Antiseptic in Cap bottle makes very hard Caps.
Small cell 10 50 100 milg &
1 gram – located hardest but bottle, 10 milg good

Belladonna makes eye exceedingly sensitive to light.
Normal eye would be OK in Binocular at a distance
~~Also~~ Can be used any number of times if no tendency to glaucoma
Those under 30 not affected are OK
Should not be used on any eye until tension taken beforehand
Continuous use sometimes leads to of inflammation of Conjunctiva
Expert suggests use of Homatropin
the active principle – effects dont last as long – effects can be counteracted by ½% Eserine
this acts as a Myotic
Homatropin & Cocaine discs 1/50 each would be what is wanted
Dilatation requires one hour for maximum effect
accommodation can be restored in a few hours by using Eserine
Ralt & Reese MD 50 W 52nd St NY

Resinate Lead 175 grams Vac 10 grams Resinate Caused fellows thru thin linin with little Vac filter —

Try Benzoate Salicylate Oxalate Citrate Tartrate Resinate & other hard organic Salts for Vac instead of Resinate.

Absorption of light from an arc light in atmosphere is 10% of whole per Kilometer 50% at 5 Miles
Must be wrong Here only 10 Miles —

Side light vision - confused as to detail but for night sensitive - Make experiments with Center of gravity

Any disturbance of the internal vibration of a Molecule causes waves to be sent out into space on the Aether. Heating sends out heat waves
Should think an Electric Stress should send out XYZ waves to space Magnetic Stresses other waves etc. Chem action still others — What is wanted is a line of instruments to detect such waves & make them Congant to our 5 senses

In addition to the Aether of Space there may be a few more Illuminated gas Than by no gas in our atmosphere & extending Millions of miles into space & giving not 15 lb Pressure to square inch but tons of pressure but nothing to do with the Aether & not taking part in any transmission

due to changes of barometric pressure, sound waves of 250 000 per second of great sharpness might be transmitted by this gas. a million per sec would be better & this probably could be obtained by disturbances of crystals or stones in diatrichies by using Spark gaps

Think vibration of the steel bits of Slemin recently sounds to give a notes that with the 25 000 second the Mato graph, stream sensitive microphone would detect 5 miles away

Sound attracts & repels light & dia as in a resonator vibrating at Mouth repels & light dia & think 100 000 sec give good result.

If the internal vibration of a molecule is the source of the vibrations of light & heat then probably the lowest vibration per second would be 250 million million per second being the vibration at ordinary temp

Now if we want to get slow & entirely new series of vibrations we must heat dissociate or complicated Molecular Complexes or Crystals

These would give the reg heat & light waves but superimposed on these would be very much slower vibrations

(1) those due to the double salt aggregates, or complex

or crystal, liquid crystals + Colloids perhaps as slow as 50 million per second The trouble will be to find an instrument to bring out these waves = possibly the darkening of silver plates Iron opaque substances Comes from these waves as noticed in X ray experiments in measurable Cases

If Cancer is due to a germ it could be proved by putting on top of a skin cancer a more attractive pabulum that would cause the germ to migrate from the flesh into the more nutritious pabulum Especially as the germ has to fight to Leucocytes protective bodies if the host

Brashear to make a lens for reflecting ~~Spy glass~~ –

Hurry up Resinate load plant

Make some 1/2 Res Mag + 1/2 Rosin 24 prints –

Illuminated ~~Phosphorite~~ loses its activity in 1600 of a second

Photron Oscillator 50 million waves a sec – Half Cathode tubes Gen'l Elec Review 19 – 771 – (1916)

Color Photography found Red blue + green Colloid dyes having finely granular particles mix equal proportions stain plate + put Sunlessons as like Lumieres –

See if we have any BS
am sure we have a bet-
try for blanks –

Try plating wax on Celluloid
prepared see if peels –

Make wax that on celluloid
Record with Reg disc speaker

See how Dennis did with
printing with 850 lbs for 1/2
men & furnishing at 250
lbs

Walter Miller get one of those
Computating Seconds 150 Thousands
want to see of the condensers.

Molograph = Try Hydrozomine –
ditto Carbon or Silicon –

See if Ferrocy Copper is decomp
in our plating bath.

Get all the Vegitable Dyes for
plating Experiments.

Maxwell. Estimates that in
1917 we will sell 125000 Discs
50000 Cylinders

Requires 175000 points.
144000 weight on basis of 6
points to Karat See next page

January 3 1917 Diamond situation

in machines at Orange & Chicago	2921
finished stepped-mens in stock	8420
finished points in arms	1692
	13033
Amberola finished Speakers	9327
" arms	3153
	12480
Diamonds in holders swedged	10 000
" lapped for grinding	20 000
points ready for holders	30 000
in holders ready to swedge	5 000
	65 000

Diamonds in Vault 15942 Karat

Sand 275 "

Ultra Violet Light & electrolytic surfacing - Wax treated & Celluloid

Should try most sensitive Balmain luminous paint on gloves exposed in Camera then laid on dry plate & left to expose itself & develope. Think can get repeat work in very weak light this way

The Molograph permanple either with phones & vibrating shutter made of Monger & proper fraction surface wiggling to lead to key results all physical energy changes & modification of matter of all kinds & all wave motions take place at junctions or surfaces

C35

Why not make a pony plate
Consisting of a mix of powdered
sediment bort lets Pyrrhulopland
base on the Track of Diamonds of
Colors

Boride of Carbon is next to
Diamond in hardness actually
grinds jewels on Diamond
so Mosandrajo

Boron mixed with Carbon
Copper Matrix — see Moissan
find some one who has
furnace & class money to
make Cheap Boron

Ask Brown of Condensite Co
if he can give me a varnish
that holds Condensite fully not
soften — want it for
Diamond Lap

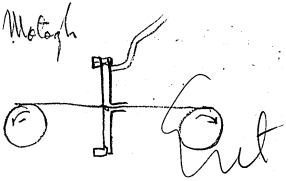
Diamond lap cylinder 1" long
discs 3" dia .035 battery
steel — big mandril 2" dia
Requires 12 Karats sand in
Varnish sides of Edges Vary $\frac{1}{16}$
1/3 of lens thick.

Varnish Compla blanks with
Pb resinate Var bring up in
5 hours in Oven to 220°
& Oil — print.

for diamond laps — Malleable
iron —

Varnish over with dust & hollow
dry + then roll with small wheel
powerful pressure then dissolve
off Var & save dust not charred
4 Karats Edmaker

Motogh



Mr Bullock Northcliffe agt
London Times.
30 Church st
7250 Cont.

Take The Melted Res mag 9
made use 1/2 + 1/2 Rosin
& Make clogin 6 Counts
present & test 130 Fahr
1 hour.

Nickel in 1916 - Value of Ni produced in Canada $23,000,000
in 1915 20 million 1914 13 million,
in 1916 only 1 million — 2 large Cos
a 3rd starting.

When the cylinder disc laps wears immense in Acid Copper solution to Cut the iron, or wipe it as Cu Sol might penetrate between —

Flat Laps are certainly preferable to save Diamond dust, but is it possible to get them to run true

See what of Electric furnace Rare Metals etc get from Dettem up in Library there is Boron, called Boron Carbide —
Meadowcroft Telefonic Reiber of Electrochem pnal up he knows of Concern who has furnace

Moissan gives in Compt Rendu
CXIV 392 1892
also Ann de chem et de Ph
Series 7 VI 296 1895 -
gives method for production of
Pure Boron not at that time
known - Get full account,

See Comptes Rendus
CXVII 420. 1893.
Boride of Carbon Moissan

Amorphous Boron 70 grams of
finely powdered Magnesium free from
Iron or Silicon is mixed with 210
grams of recently fused Boric Anhydride
Mix is heated in Clay Crucible to bright
redness, in a few minutes vigorous
reaction takes place. The Central
portion of the product was boiled with
water + HCl till Magnesia was removed
then treated for long while with enormous

quantities of pure boiling HCl washed with
water, treated with alcoholic NaOH, again
washed with water, then Boiled for
several hours with Hydrofluoric acid
washed with water + dried in a Vacuum
Product very light Maroon powder
Does not deliq on exposure to air
Contains 94 to 95% Boron 2.3 to 3.75%
Mg + 1.2 to 1.6 % of matter

If this product is fused with 50
times its weight of Boric Anhydride
+ product treated in same way as the
original powder, it contains only
traces of Mg. If Boron is prepared
free from Nitride, reduction should be
in a Crucible lined with mix of
finely divided Tellurium oxide + Carbon
Moissan C Rendu - 114 = 392-397

Metaplumbates for LeCanda

Diamonds on steel = Leon Franck.
Chem Centr 1896 II 573 & from
Stahl & Eisen 16 – 585-588
Various steels heated a la Moissan
all gave diamonds many requiring
25 do to 3000 power of Micro
to see – all made in Methylene
Iodide –

All action of light on Chemicals
always tends to produce
Compounds which have far
greater Electrical Conductivity
by using Wheatstone Bridge
& light shown for some very
sensitive effects from light
J Gibson Zeit physikal
Chem 1897 – 23 – 349

Phosphorescent Sulphides Sulfide p 450
Chem Soc Abstracts 1897 do p 469

With a Mixt of 2 H + 1 O. Dry
Barium Oxide at 280 Cannot
all the gas to disappear
the O Combining with Ba to form
Barium Peroxide & then the H
reduces it to Barium Water
250° C lowest possible temp
KOH acts same way at 280 @ 300
all in glass Vessels CR 1897
125 = 271 + 275

Find out where supply Diamond
Kept in fire Safe
Also Consider keeping some in
Safety deposit Vault
Who has charge of Diamonds

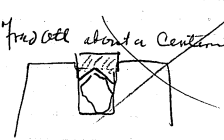
Look at Hounds notes see how much sand per day per cylinder & output or amount sand for pulverizing

Action of light on Iron & many number of chemicals Max Ho[illegible]
Zeit phys. u. Chem 1898
26 - 337 - 361

By getting 300 or 400 mesh fluorescent particles put on surface of a fast plate with opaque particles of say charcoal between, one should get a very fast plate for low sale light on this [illegible] developing envelope developing effect of fluorescent light has entirely [illegible] Cinnabar Salts to fluoresce on all sorts of [illegible] — This should give rough outlines of a warship —

Chem Soc abstracts 1898 pt 182 Read for war

Fred Ott about a Centering piece:



or

How would it do to grind instead of burn the paints Emery & rodin

Fred Ott - see that squeezing jaws brings diamond Centerpoints

H. Rigollot Compt Rendu 1895. 121
164-166 - Action of Infra Radon
Silver Sulfide - Uses Ag plates
Sulphur only Element in dilute
sol Sodium bisulphide.
plate 40 mm long 2 mm wide
Can be trimmed for coverslides
discharge below visible red
Max Emf 0.053 to 0.094
Illuminated plate always neg
no matter what solution used
Heat has very little action.
but some —

K Chlorate decomp in presence
Manganese dioxide —
H_2O_2 decomp in presence Copper
Battery — Hatchy

Luminosity of pure organic compounds
Wiedemann & Schmidt Zeit physikal
Chem - 1895 18 - 529 552

Abstracted 1896 Chem Soc just received
for year - also 1895

J Adolphe Besson Compt R 1895
121 - 125 128. Chemical phenomena
in presence of Ozone decomposed
by light giving nitrous etc

Electrode sensitive to Light
H Luggin Zeit physikal Chem
14 - 385 - 393 - says most
sensitive [illegible] Plat plate
Covered with Bromide Ag
paired with Smooth
Coated Silver Wire
in Normal Sol of
KBr in diffused daylight gives
0.40 Volt

Sludge from weeks' work with one roughing machine gave on recovery
8.795 grams.
or 43.975 Karets,
I have still a little more to go with this
Hand estimates 37 to 38 Karets used.
Something wrong here

L E O De Visser Rec Trav, Chim
1901 20 - 435 - 456
Ba Sulfide pure, dont phosphoresce
if 2 atoms of Bi to 100 000 of
Ba Sulfide is used
at ordinary temp if phosphorescence
one month after appears to
light at low temp phos is not
so obvious but remains for
a longer period while at a
higher temp the reverse is
the case

P Vignon Compt R 1902
134 902-904 Vapors emitted by
zinc are capable of acting
on a photo plate.

Meyer Wildermann Rev Roy Soc
1902 70 - 66-74 effect of
light on $CO + Cl_2$ gave
accurate measurements -

Read Chem Soc Abstracts
1902 -

Raikow Chem Zeit,
action of light on sublimed
Chemicals (Benzoic a
Naphthalene, Iodine - Camphor
Sublimed stuff always
went to illuminants
part of Vessel

When a solution Nickel
0.05 gram to 300 cc
Containing Chromic acid
+ alkali perophosphate
Electrolyzing at 70°C
using 0.1 amp 5 hours
N_2O_4 formed
Auguste Hollard Compt R
1903 136 - 229-231

Read 1.903 Chem Soc Abstracts
for com. phosphorescence

Kislakowsky Zeit physikal Chem
1900 35 431-439
H_2O_2 having few drops Ferrocyk
1% sol H_2O_2 in dark very little
decomp but when exposed to
light very great

Dubois Compt R 1901 132 - 431-432
Many organic compounds when
warmed with alcoholic KOH
yield solutions which are
luminous in the dark
in some case at ord temp. —
Essence Rosemary Cumin
Rose Camomile
Best results with Aesculin.
This glucoside gives a solution
which remains luminous
during a whole night.
Luminosity increases when
shaken so air get at it
fluorescence destroyed by
adding H_2O to alcoholic sol
but also less than Marine Bacteria

Oscar Gros Zeit physikal
Chemi — 1901 37-157-192
Leuco bases of a number of
Colored derivatives of
Triphenylmethane sensitive
to light — darkening must
rapid under rose colored
glass. addition of Chlor
generally improves sensitiveness
Bleaching of dyes themselves
also usually black
good long paper

Tschugaeff Ber 1901. 34
1820 1825
Triboluminescence
Crystals emit luminous when
Rubbed or struck
See Wiedemann Ann Physchem
1888 [VI] 34 - 446
tried 500 organic substances
Uranium nitrate strongest
Quinine Vallerate, Cocaine Hydroxylate
Cinchonamine, Quinamine
& Aniline Hydrochloride
luminosity Colors when force
stopped (except with methanol)
& sulphanilic acid

Otto Ruff & Victor Stein
Ber 1901 34 – 1668 1684
Sensitiveness of Diazo Compounds to Light

Recd Abstracts Chem Soc for 1901 – for Light etc

Mourillo. Compt R 1898 127 – 372-374

Intensely phosphorescent Strontium Sulphide obtained
100 grams Strontium Carb
2 grams Bismuth subnitrate
2 " Sodium Carbonate
& 0.12 grams NaCl
After moistening the Carbonate with Sodium Carb
heat to redness & then mix
with 21 grams Sulphur &
the Bismuth Salt
heat to bright red for
4 hours
its stability is stable

Mourelo Compt R 1899 128
357 589
Strontium Sulphide shows a more intense & persistent phosphorescence when Excited by diffused daylight than when Exposed to direct sunlight
Ca Ba & Zn Sulphides show same peculiarity. Exposure of Sr Sulphide to diffused light makes it more sensitive to subsequent Exposure whereas Exposure to direct sunlight reduces sensitiveness & may destroy it altogether

Repeatedly Exposing Sr Sulphide for short time to diffused light it becomes so sensitive that Marked phosphorescence is Excited by the light from one Candle. It also shows intense phosphorescence, which consequently heated to blood red heat

One phosphorescence Sr Sulphide which stand another phosphorescence

Read Abstracts Chem Soc
1899 for Light —

Get from Emmanuel
some porous plates
for filtering the Diamond
dust stuff

Infra Red can be seen in
the Chromosphere up to
8600 by connecting
the light on slit a
filtering out the common
rays by CS_2

Read Chem Soc Jul
1884 both Vols
1883 both Vol

Mix of Chlorine & H. - Chlorine
must not be exposed to light for
an instant if not then Cl_2 & H
will combine even in the
dark -
increase ~~in~~ economically
increase detection of
Compounds acted on by
light

Becquerel studied Quenfon
Red up to 14700
by projecting infra red
on a phosphorescent
screen Compt R
96 —

Honey - Proc Roy S. 35 f 80-81
ray beyond 8300 can be
photographed when air fresh
moist

Balwées Nov 9 + 28th/16
Crushed 998.99 Karati Gout
Loss from Crushing 27.08 Karati
Loss from Chipping 26.91
Karati — Gross Loss 54.29
But after sweeping benches &
floor recovered 26.79 Karati
971.20 Karati used
19 days.

Hend — after roughturning
inspect + only use
good ones that you
know will be OK
+ we will dispose
the others —
G

Sodioferric Oxalate is sol in water
+ very sensitive to light.

Aqueous ferric Chl in presence of
Oxalic, Citric, Tartaric + other
organic acids is reduced slowly
by light.

Ammonium Bromide is somewhat
decomposed by light, at first
yellow + then, if free Br, bromine acid
& free Bromine

Bromide Iodide plates are
most sensitive to pale blue
450 wave length rapidly
diminishing towards violet rays

Sulphides of Ca Sr Ba + blends
are
most sensitive to rays more refrangible
than F while Sylvinus +
Iceland Spar between D + F

Iodide of Pot of treated with a small amount of Hydro Iodic acid in diffused light not sufficient to color it well when in full light turn yellow from free Iodine

Mercurous Selenate Hg_2SeO_4 grayish white amorphous substance obtained by adding Selenic acid or an alkaline Selenate to Mercurous Nitrate Very rapidly darkens when Exposed even to diffused light

Dimercuramon ium Selenate obtained by treating Neutral Mercurous selenate with strong Ammonia solution Hg_2SeO_4 White Compound darkens when Exposed to light

Mercuric Selenocyanate obtained by Adding potassium Selenocyanate to Mercuric acetate darkens on Exposure to light

Light acts on Cadmium Yellow

J+P Curie Compt R_
91 - 294-295

Development of electric polarity by pressure in Hemihedral Crystals with inclined faces

pyroelectric Crystals by pressure give same effect as with heat Blende, Sodium Chlorate, Boracite Tourmaline Quartz Calamine Topaz Dextro Tartaric acid Sugar + Seignette Salt. (whenever a non conducting hemihedral Crystal with inclined

fibres suffers Contraction
Electric polarity is developed
Whenever its dilated fibre is
also developed but its polarity
is reversed. Connect the
Diaphragm & the Blood vessels
into Elec circ/ Cosmophone (Engpt)
& other applications —

Ethylcinchonidine obtained by treating
Cinchonidine ethiodide with Potash
solution. Transparent needles
quickly become red on Exposure
to Light — M Claus
& Denerbaupt Ber 13 2187 2191
see also Ulrich on Some
articles Remarkable for Light
also see Ber 13 2290-2294

Kahlbaum Ber 13 2348-2351
Methyl Acrylate Light slowly
Changes it to a transparent
Gelatinous Modification

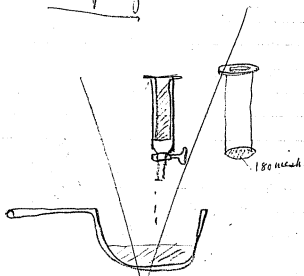
Isatropic acid R. Fitting
Annalen 206-34-67
Atromylenesulphonic acid & also
Barium & salt. Very sensitive to
light

Chloropurpureo-Chromium chloride
red Crystalline powder also in 154
parts water to violet red solu
depositing Chromium hydrate
when exposed to light
Jorgensen J pr Chem [2] 20 105

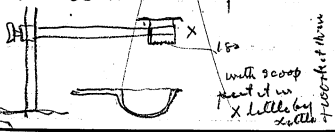
Abney Proc Roy Soc 27 291-451

Ag Br is not sensitive below B
is when exposed under
Sodium Sulphite was
sensitive to M (about Wave
length 12000) the lowest
limit yet photographed
Infra red is very oxidizing

Read Chem Soc Abstracts,
1880 & 1881 for light.



Drop the dopa into Nitric + H_2SO_4 mix.
But perhaps this will stop up + its better this way



Read Chem Soc Jnls
1848 – 1849 1875 1874

Try for extracting olive oil from Diamond dust
~~Carbon tetrachloride~~ ng
~~Bisulphide Carbon &~~
~~Chloroform~~

Pale blue light shows out at sea

Very out lines sunk with shoals every 2 miles, 20 miles from at Center Dashoals Inshore

Alvadd 1-24-17
Diamond Report

102 ok
7 lost
4 Broken
9 flawed
3 Rejected before grinding

Used 92.225 Karats for grinding
(Recovered) .756 K per point

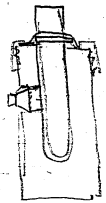
Consumed 51 hours average 25
mesh per point.

Jany 25 –
got 218 on 1 machine 6 Karats
.00 grade 135 ok for
Rerunning + polishing
71 ok for 2nd grinding
Operation with finer powder
8 flaws 4 broken

Alvadd to date 1/25/17
has delivered .5381 points
To Hand 145 Karats
.37.11 points per K delivered
Delivered
26th ground 54 points lost 2
Broken 1 flawed 6 OK 44
1 machine 10 hours
Used .4907 Karat per point dust
27th ouelpud 54 points –
flawed 12 OK 42
.5785 sands sand fine.
Saturday 27th – ground 28.
flawed 3. OK 25, used 17.41
Karat .6217 Karat per points

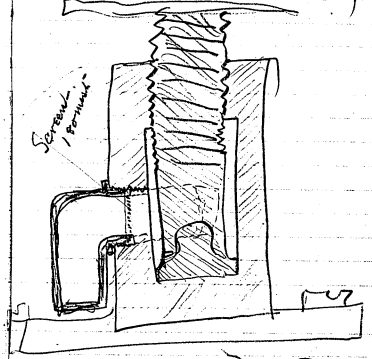
Cooper quotes Acetic Ether
95% 500 lb lot 26 cents
drum 15¢ credited on return
195 gal about

Chemist - Dr R. Rutashauser
(Swiss) c/o Col. O.C. Horney -
Aetna Chem Co
600. month — 1201 Broadway N.Y.



Diamond Crusher

Try Charles Fuertes clay
with Castor oil



Diamond Crusher

Ask Dwoz on phone Alley
have any Balmain or other
phosphorescing sulphides
not mixed with paint
material, or of it all
mixed up and most
questions,

Report on regenerated diamond
dust.
Machine #1 Run 2 weeks
ground 449 points, used
255.445 Karats recovered
diamond from grinding machine
Average dust per point
.5689. Lap cools perfectly
dry when charged—
now charged

1/31/7

Machine #1	30 points	27 ok			.4297 K
"	2	47		42 "	.4125 K
"	3	19 "		19	.6289

#3 new mach 2 hours 1/2 run
sent Hurd 224 points ground, for inspection
rounding & polishing result
198 ok 13 broken 10 flawed
3 rejected to be regrooved
Record to date from Oct 142
Vials recovered sand approx 3200 Karats

Hoffman use: 44½ gal
force Yarnell for dress
daily 21000 lcc cords
average

Labor Costs diamonds

Drilling Chucks	.0018	per point
Sweeping	.0025	"
Roughing	.08	
Grinding	03	
Rounding & Polishing	.10	
Turn & Cut off	.0070	24.78 per point
Assembling wax	.026	

[71]

20 cc Straw oil heated with 300
mlg Gilsonite Covers 10" dia
good drainage - with use of 10 cc of mix

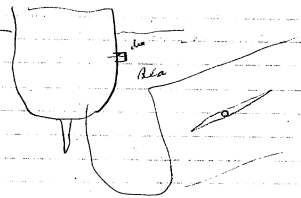
900 000 lbs oil - 7.5 lbs gal 8c gal
120000 gals $9600.
7 Tons asphalt $25 $175.
Total $9775. per MILE square

BP Temp Trans 250 to 350° Cent

Experiment with drainage oil to
add something that will add
to its superficial film tenacity
so bubbles can be blown
the larger the bubble the
better the mix will be for
calming waves & drainage

Dr. Nichols physician
says few drops
Ethyl Alcohol

will stop foaming - try
in our Cells or aforworks
see if affects bottom on
Endurance test, Ethyl Alc
works but too expensive
but its usual, another say.
Trisodium phosphate alone or
with Carb Soda - stops foam in boilers
Submarine detection, if
Microphone used, use a
multiplying lever of
greater leverage than 2:1
Reg disc on water
amplitudes are very small

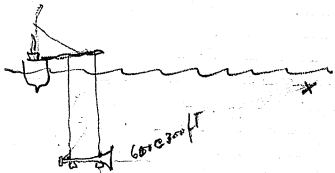


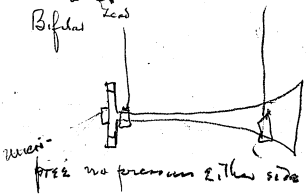
Red + heat waves causes Balmain Etc phosphorescent bodies to lose phos quick

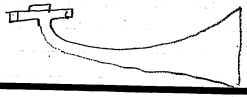
Transformation of slower waves into more rapid ones
When Sol of Naphthalene Red has been shone upon by beam of deep red light it emits fluorescence an orange yellow.
Chlorophyll ditto
Chlorophane, the impact of slow radiant heat waves is compelled to set up an emerald green light.

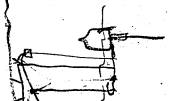
Pressure in sea water about 1/2 lb per foot, depth

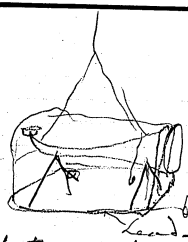
I told Purchasing Dept Charge Luminous paint to Edison personal (X) account –

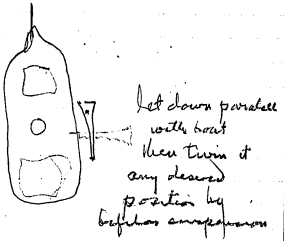












Good running 3 deg at speed
4½ miles — to ~~[illegible]~~ open window
travel 5 feet. — Scraping off
5 ft of sandge,

Worst conditions are
10 Knot speed raise
5 deg this scrapes off
3 ft of snowdrift
before window uncovered

amplify with lever 5 to 1

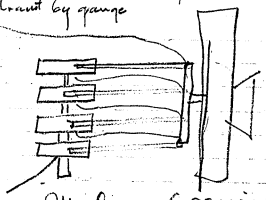
Warner
Hatch
Holland
Taylor
Kennedy
Dawson
Moore.
Constable.
Hayes

2 periscopes on each boat
Each rotatable in horizontal plane by
Elec. motor or hand from below
Man at each periscope.
American periscope tubes vary 3" to 5"
dia –
Window is about 3" high and angle
of vision 40 to 60 deg
Lowest cruising speed 4 Knots
Max 10 Knots but overheats
Object of rising for an observation is to
keep the boat on as near level keel
as possible – The angle of rise
being about 3 deg for quick handling
a rise of 6 deg is bad handling
Periscope comes up to a mean of
about 5 ft above water
The height varies with sea
conditions & with the motion
& distance away you want to
see. Ordinary observation
is from 30 seconds to 1 min
seldom more than 1 min
Engines are 6 cylinder. There are

2 Engines, 250 @ 300 HP each
2 propellors Engine speed
about 300 RPM at full speed
on surface + 250 RPM submerged
full speed, slow speed 125 @ 150
RPM

Hutch ask DeForrest for a
copy of the lecture on his
Cruise on Holland

Tests = 1¼ dia 1 8/10 thousand feet brass
heated at 63 lbs - water pressure on
hydrant by gauge



Malorgraf device -

Ask Hutch get me
hydrographic chart
around Great Bedford,
[illegible]

Wager Hudson River
is probably best place
See hydrographic map
+ also Shrewsbury
river

Ambrose Light Vessel
4.8 miles practical from
Scotland Light Vessel
60 ft + Ambrose 59 @ 65 ft.
Both have bilge keels, Ambrose
has submarine bilge -

Suggest DeFoment, Pr fu with 1 - 1 - 1 -
" 2 2 2 2
up to 6 - Each having a
different strength -

perhaps a single sheet of mica between 2 pointers will specialify sound

In a small boat with very a 25 ft funnel + microphone + a microphone
Reports Especially of used
Ellipsoph coned probably
detect pressure of Gloucester
10 or more miles away
+ hear talking 5 miles
Certainly hear a Submarine
on top changing 6 miles
or more away probably
10 — + get Exact direction.
probably triangulate it tooth
phone + fire at it

Perhaps Balmain paint
Can be sensitized for Infra red

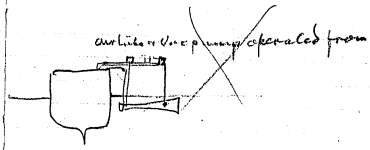
Neha ~~why not~~ use water
jacket on moulds —

find the small Experimental Malogh
+ all the devices used with it.
also bring John the make drawings
for new alarm described in
any new Lab note book, also in
big book in which is contained
the old Fla ideas + also change 1.25"
Experimental to a worm Wading division
+ put Clamp on around it
A Torpedo destroyer (English)
has 3 Vib per second the hull
observers.

Ask Hutch if war ships
always go in ~~Cannelon~~ formation

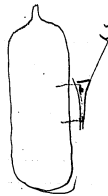
To prevent fogging with Balmain paint after lead dry put any Calladion or some non light absorbing varnish over prints so no vapors get thru to Emulsion.

Expose all my old X ray plates on Chemicals + then lay over a photo plate, see which outside warm gives black, those that give blacks after 5 min - make up plates of the Chemicals to not take Balmain -



Deck when wales appears the Cock is closed + Tube clamp to Bifelar cone, + whale lowered

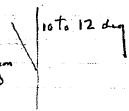
Tell Constable that can lower with funnel parallel to ship -



This makes better arrangement

a gun fired horizontally
Ball will drop 6 ft in .61073
of second - If velocity is
2800 ft second
then it will reach earth
after going 1680 ft.

Windmill - angle of Slats



Moving pic machine - film as
fast as ground out passes into
developer so can see it in
5 seconds + in fact prepared it
on big scale —
also brush plate or film
over with developer
+ then dry - then photo and

Wet plates should develope
instantly - possibly if
plate wet with developer
in it semi dry (1) damp
that it would develope
with the common chaff

Try a smoke screen which
is to light of day but
previous to a special ray
from arc so we can
see Enemy + they cant
see us -

fighting top narrow + wide to
show less to Enemy + a
smoke blast at end ship so
~~that they~~ ship appears several
times longer than it
really is.

~~[illegible]~~

See over

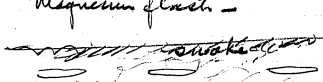
we can see they on sea or black circle —

The smooth bore propeller could be used after spiral worn out - double the shots before Returning

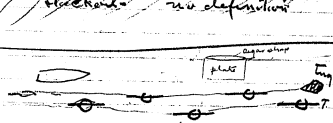
Find out highest fireman tower made -

Shoot up vertically a Camera by Compressed air - so shutter by wind Closes but just at point where it is frequent it opens + photos perhaps of a circle + drops by a parachute.

The boat picking it up - possibly at night use a Magnesium flash -



low visibility to distant Enemy not to bro -



buoys with heavy plates for Torpedoes to strike -

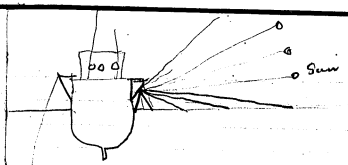
These boys could be towed by a powerful tugs as a screen for torpedoes

Stereoscopic segmentation

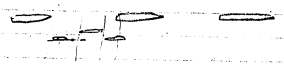
Direction of wind for sighting by forming a projectile exploding to a smoke ball block of white – towards enemy

Large Suction fans 25 ft diam draw smoke from towards Enemy so as to see

Extension with fine tower from top Mast for Range finder seen with guys wire – when in battle, stand pivoted to lay horizontal perhaps gyroscopic!



Side to increase invisibility by reflection downward



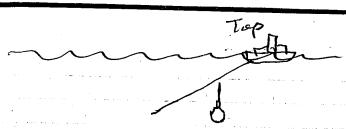
Small boats with false extended upward sides as high as Broadsight taking as screen between ships + so enemy seen

Towing plates forming a Corral for the destroyer lights at night –

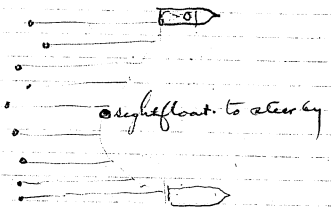
Why not use a 5" telescope on
War vessel with it pivoted or gyro
& Range finder

Put my telescope in order

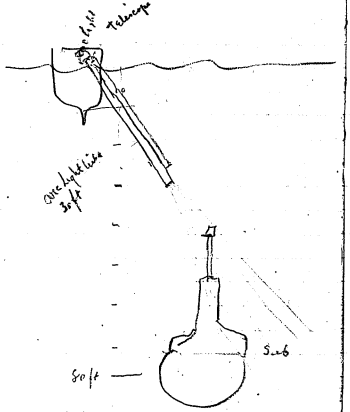
Suggestion of Inclination
balance seems good if want to
locate submarine in deep
water, if sub is down 75 ft
& depth is 200 or more so
wrecks don't bother, tow large
Coil 25 ft down to escape
periscope or ~~[illegible]~~ we strike it
would be placed in balance
& intermittent Current used
Certainly indicate position
of Submarine



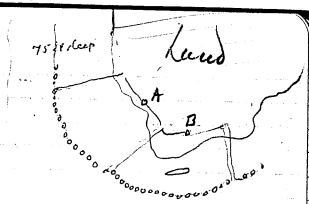
Drag wires, when strike submarine
Remainder [illegible] electric magnetic
Bottom



Drag wires - 1000 ft apart.
small ball end Lock
piano wire, boats 4 @ 6 miles hour



How deep down can an 16 CP lamp be seen hanging on bottom of Ocean with reflector.



Cable with Coils worn 25 ft laying on bottom, ends at Shiloan A + B. in a coherentalone bridge with Sensitive micro + telefone receiver say 10 mile section, any submerged submarine passing over the line would be heard, less sections than 10 miles could be used

At night 28 ft funnel, Double mono Magnesium rockets - Known direction, can have gun ready get fairly close let go rocket + take not they cant see you + before can sink you have

plugged them, would have to
run slow to stop noise
of beat but as they are
charging they could not hear
anything.
Capt say Kolbeck will be
best submerged funnel or
air funnel or both,

Stahl Drafloinn Roy Geller
pro Geomans Knows
The working up was unknown
Count. England coupled
off most heard at his
boarding house bought

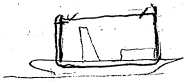
Extension to range finder
telescope of 6 ft with
cells like Langley see Dumondelo
also Eye protector like Monocoscopi
all to my telescope at Eagle rock
Cosmos - It is very

important to keep all the light
out except what is reflected from the
ship.

X light is more than useless as it
reduces the sensitiveness of the eye
Think of tube 10 ft long be enough
Lampblack should be like Smiths very
fine + black + Varnish should be
non shining Var

If sub located Exactly
Explode some mines
near, when sure -

visit to Walter Mulley & tell him see Walden before he testifies for Emerson & Dyer — say Speaks & said points Walden wants to make



Coil — as long as boat & as high as possible

balanced on bridge, using a 10HP Current intermitted & deductive bridge to detect approach of a sub, or running under water,

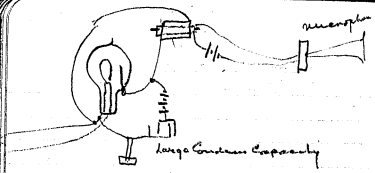
also around the sides of ship — balance ship & then go ahead

possibly a deceptive telephone to make more somehow or Mecra & phone to complify

Experiment June 6/17 Burnished over a very dry photo plate with strong Sol of Potassium ferricyanide, saturated in which was some Bromide & Iodide to Iodo

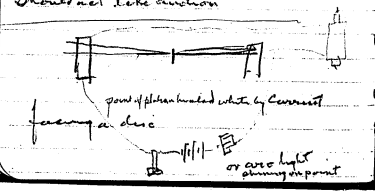
Then let plate dry. After exposing to light & developing in 1½ seconds & fixing in few seconds by washing water with a little Cyanide in it — Think can make a 20" glass wheel & develope fast enough plate, also a column sensitized. This way could take all pictures, the loop run into CO_2 gas & thence thence a propelling Mechanism & propeller 6X6 ft sq. with only a lag of 3 or 4 seconds —

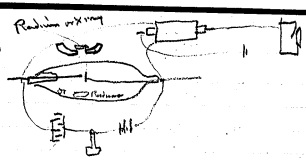
am trying Metal Hydrogenous with by propeller



also 3 in series –
Induction Coil very high Voltage –

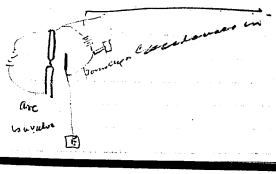
Vase like at point
where glow spreads out to touch like
walls, (it strikes a cylinder inside a)
using a very high grade insulation
Coil turns at beyond normal cur
+ choke coil in telephone ckt.
Should not take cushion –





Speaks to Mendenhall about getting
Martin to write up the Edison Valve
or Wheelhouse Rumpfer, =

Try sleeping in dark room
record dry objects after 2 hours
then put in dark room 4% Co cain +
note any difference if none go out
to lighted room for 3 or 4 min &
return — 4 times — what is effect



C(1)

Laying it out on drawing board
doubling length of dark television tube
Cuts off 4 times the free light not used
for the ship sighting rendering Eyes much
more sensitive, especially of part of a
darkroom.
If device could be fixed for 30 ft television
on top, would it would be a big success

possible a tube 10" dia running down in
ship to observing room + mirror equipment
at top, could be equivalent, tube could
be 100 ft long + top might be
done away with if range finder is to
only use the proper taking the proper
groups

Euphthalmine continued

Transitory action, used in ophthalmoscopic
Examinations, Chronic + acute Iritis
Operations on cataract amblyopia –
Use 2 to 10% Solution
Merck Index

Homatropin –
Solution –
1 grain 50 minims
of water
It dilates pupil in 7 to 9
minutes – Eyes returns to
normal in 24 to 48 hours –
Dangerous man used this –

Even better than Homatropin is
Euphthalmin, a Cocaine derivative
maximum strength of it is 5%.
One drop put in eye gives maximum
dilatation in 25 minutes + lasts 2 or 3
hours, Does not effect accommodation
lense or retinal nerve endings –
2½ % or less well to OK –

Euphthalmine Hydrochloride,
Phenylglycolyl – n – methyl B.
Vinyldiacetonalkamine Hydrochloride
Mandelic Acid derivative of
Beta-Eucaine, Sol W, a. Mydriatic

5 ft wood ring 18 gauge
2 Collons Layer
14179 feet. 90 ohms

Minim ·0616 - CC
or $\frac{1}{16}$th of a CC
50 Minims — 3·08 CC

Small gyroscope on end of propellik.

Ocean Water (not arrived)

Propellik a Screw to hit
under water part of
boat Hulk —

Think I always run Chalk
lefthand 100 feet for very
sensitive wood link 4·5 deck
Chalk should be run 1 Ray
Wire the copper earth will
be too Enough.

Finer than Mustard Seed
Blackmustard small
Turnips
Rape
Cabbage
Cotscomb
Clover

for Carrots oranges
Cauliflowers
Cauliflowers
English Charlock, Turnips or
Turnip Rape and
Wild Charlock Mustard

Heul Elec preliminary once a
week - Every friday morning
final trials a week —
They will put in a Crucible
for us

E2 Submarine has a weight
of steel + iron approximately
270 000 pounds —

Carlson Micrometer Calipers

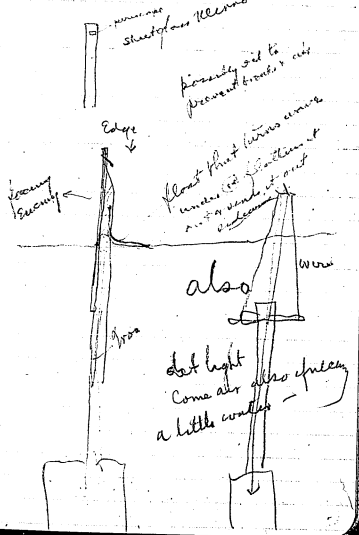
.0265	.0265	
.0272	.0261	We use these figs
.0255	.0275	

If with 100 ft mast can see horizon 17.14 miles — if Elevation ladder added (8 ft) Can see 21.34 miles gain of 4.2 miles with valley advantages as to angle — less haze — above surface fog

Reported, Elevation (added 10)
" Vision Experts 2
" Report Smuggler Present. 3
Next " Rotary graphite, 4
" " Paint Mags 4 Mile smuggler 5
" " Sound Range finder 6
" How salt H_2O better than fresh for smuggling 7
Corrosion sea water Sulfur gas 8

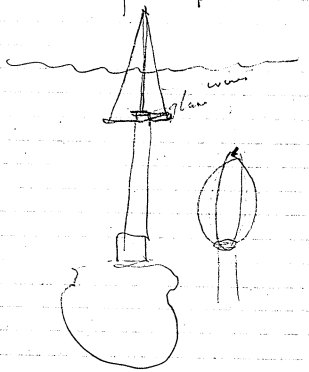
No of lacking about Sulfur Smuggler Events

Invisible periscope

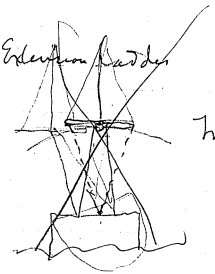


Yacht from Moorings ~~3 anchorings~~

Invisible periscope

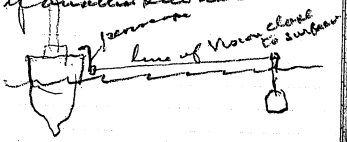


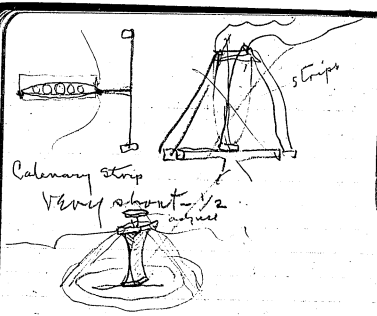
Extension ladder



Try it.

Make Experiment
with periscope vertical
from ship to sight in
silhouette the periscope
of a small submarine





Weight put so ball touches

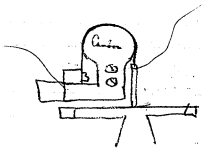
On aero propelite. 1 3/4 wide 22" long cut out couple of 15" showed hard dip 850 lbs the weight of a 12" propelite when going 2500 ft second

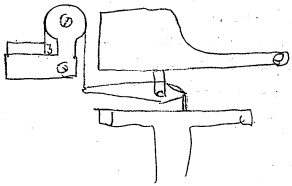
get dope from Bell on submarine Dirigible

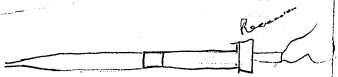
Try telephone current very close to play & weaken it as in quiet room
The oper can just know it playing but
Can't tell what it says. Use Humphry
Record of talking
Then try Microphones to make it more audible. Indicator also
~~Hook~~ Chalk telefone
Rig up permanently for Rag testing

Try the Salt water well and Drainage

Develope 3" high Exp aeroplane for very flat projectory to shoot submarines also aeroplanes







Sliding Resonator for
Water phone to get ~~[illegible]~~
propeller screw indications
10 — 8 — 4½ Water knots

If red light is least absorbed in haze or the atmo. Use incandescent Strontium or other red producing ray freely in air for lighthouse work —

Collect a large quantity of samples of metals alloys etc from dead guns
Cradle bag made of net
Bag perforated lead & sunk ~~somewhere~~ at Fromo —
Ambrose light ship
for Erosion + 3 days
down 1 day in air —

Ask Chem Soc Librarian
if he can tell me paper
~~Dub~~ by somebody
University Discoman
& plating upon heavy
1/2"

Guns by pressure from
Oxides reduced by
H & welded - Electroplating

Lay out small
Gasoline 4 Cylinder
So Can be made
plaster part
plate it by Workman
made solution 1/4
then polish & put on
more etc -

Incandescent light
protected from pressure
sunk in sea how far
or area say 200 ft
wades could shadow
be seen of a Sub

Phone - Jack Reed

What part of gun on
Submarine is hurt most
by Sea water erosion

How about big plates
of Zinc -
Rig up several pieces
bright steel all coated to
Zinc plate & put in
Sea water in the
Canteen here,
& paint with Zinc flow
in Lorimer

(115)

Problems Submitted

1 = More power in Torpedoes, want more room for Explosives

2 Metal unconvertible or other very protective gum on Rice Bucket

3 Efficient protection of ships against Torpedoes at night; small craft, cost of Bomb Ship "Blossom"

4 = Underwater searchlight for mines (or for other)

5 Development high grade steel, lubricants steel Casings for internal Combustion Engines or high speed Engines

6 Wants submarine To detect presence of vessels on surface & identify them

7 Wants substances always present to absorb or take Care, given from gum Collin TMT Picric.

8 Best paint for Ships to make invisible

9 = Good method Extinguish fire on Vessel other than CO_2 SO_2 smoke truck

Invar, steel alloy Steel & Nickel
no expansion by heat better
than Quartz S W Stratton
Director Bureau Standards
has big supply rod & sheet

Sketch idea of discarding
muffler on high speed Auto
Engine & use it to send
sound thru a fog is good
if fog is composed of very
small spheres of water
atomized —

photograph by powerful
beam of light thrown
down in water thru
pipe, with Arc giving
Red or other intense Spectral

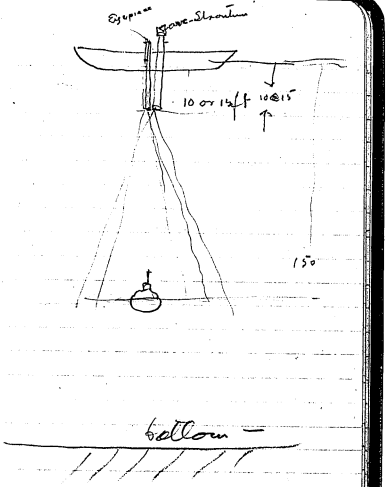
lines & Dry plate
sensitized for that light.

Asked Lieb for information with directions of Lea Bureau
" Also mechanical ~~[illegible]~~
" " Mechanical demonstration
Asked Carty - will send Lab man up
with telefonic Experimenting -

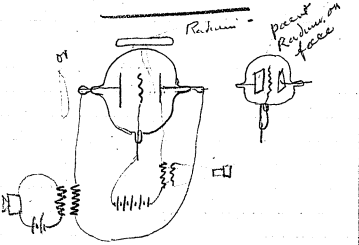
Which is well asked some Epoch Cocks
Batch will get Computers from
Washington ~~[illegible]~~

Don't forget Baker flashing
& side tube Audion -

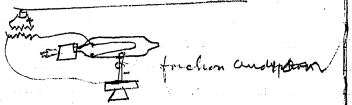
Arizona observations
must 114 ft above work
line - where man is



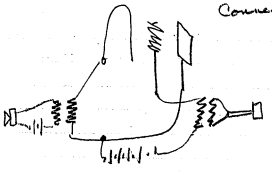
Hoxton of increased Va
Sings amplitude of sound
waves on Wesley in 60 times
less than in air

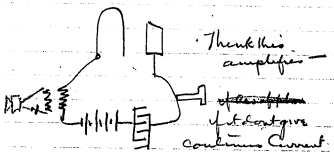


Radium Audion

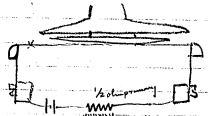


Thermiks in Regeneration
Connection -





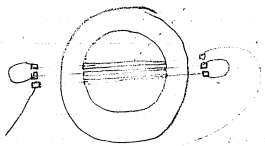
Absolute Transmitter



1 #40 platinum wire about 1/4 ohm in 1 1/4 inches
OPEN

Point higher Rear is parallel -

metal Edge



This is 3 times the Rear

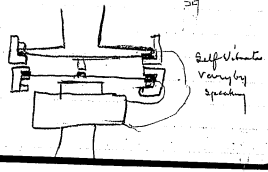
Submarine gun Nickel plate
Parent Lineed + Zinc chrome paint
Plate Zinc Connected,

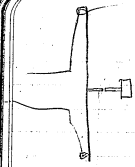
With 1/16 course of submarine detection
they will Challes by slight
advancement of course at surface
a chop slightly moves as course is
advanced, Think Couple of arms
let down just under water
to guide will a chop line of trouble

Howard - Stimpson, Worcester —

Range finders splashed by
sea Cant see — When we
get Range finder design
Mechremann to draw 001
Celluloid films across each
time get a mudguard & Cock
up - like Kodak - shaft
Reaching 2 ends & controls
at many —

Andron 2 [illegible] 120 Cells
16 M lamp from Gallery —

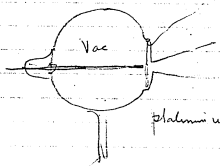




spunk 30 ohms etc Varify it

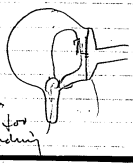
lemon quartz etc or Platinum

: arc ultra violet

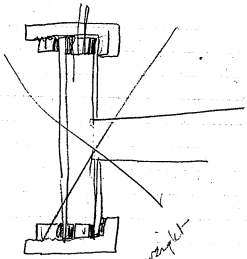


platinum window

put on pump.
find most conductive point



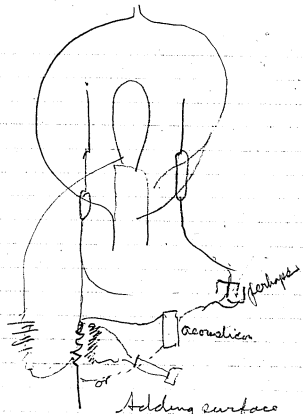
Diaphm
Valve for
Receiving



weight

Carbon disk
paper or leather
probably

Eagle Rock Telephone 853



Worn the Carbon Telefone

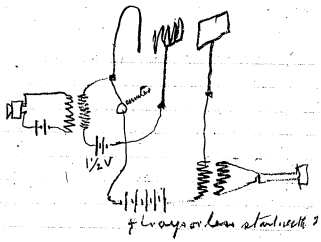
Cautery d with Deformed bulb

Lieut Clarke Ordnance
officer Navy yard —

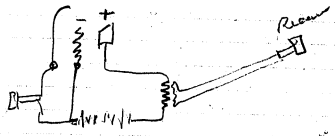
Lieut McWhorter
Chief of Ordnance Navy Yard

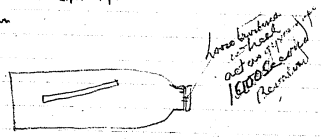
Call Thompson down
for petty ~~machinist~~ —

~~Build tanks 30 ft long
4 feet wide - 6 ft deep
for Sub Sig —~~



This way may be right



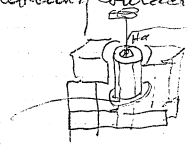


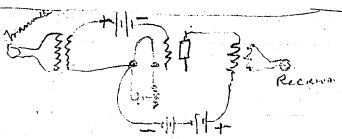
Sengfo –

Windmill projectile
Bentson Ordnance & Gunnery
Contains allusion to
windmill as projectile

2 plano Convex lenses same
kind of glass –
Same diameter of curvature
about 4".
but one is to be
4" dia the other 1 inch

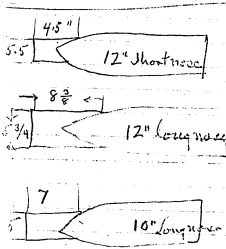
If chalk phone used
Run it with a Mono Motor
+ storage battery only a
disc of brush low smooth
Ring gives noise like
Mechanical Contact.





This is Correct from Mathes

A inventor wants 2
plano convex lenses of same
kind of glass + same focal length
of Convexities – about 4")
One should be 4" diam
the other " 1" diam –



Wind tress of 14" shell 2600 ft sec
is 3030 lbs which replaces
a shell 70 ft per second
This should be taken into account
into account properly – Board

Size of Anthracite Crushed to
equal to 0.25 Can be tumbled
to round Edges -

find out where I can get them
detailed also the big Russian
who made Walter Miller discoverer

Call up Geoghegan of Dunnells-G
about winding through Induction
Coils of the sample it equal Expert
cost,

Get a supply of all the seeds
1/2 lb Each & have Horrell
Combing them

Rig up Tumbling Lab to polish
balls — use balls along & also impellock

Also tumble them with
the finest Russo graphite.
see how its Russo working

Tumble Lead balls in graphite -
ditto Smith Lamp jack

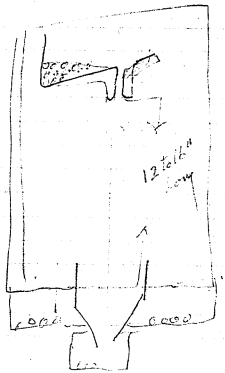
Make Drill jig for drilling
hole in a pile Meters
also use larger holes so larger
balls can be used

Try reducing holes with
Quartz Lamp block & pure
water

After getting true section of
Anthony try other Valves
Aluminum Rectifier - Small area

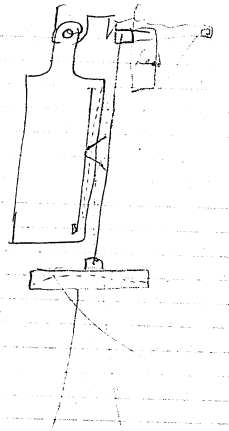
Phone Phelps Makers of the
test box for sensitiveness
after asking W Elec if they
have 2 more they can send

Expert to get perfectly round balls
Geoghegan Cooper



After [illegible] dark room moved to cont. use bad ones for polishing Experiments -

How will bring some balls up in Electric furnace like Gem Lamp etc



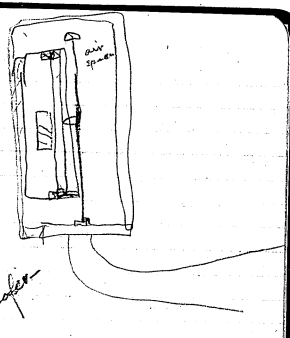
New angle spacer has 12 holes angle of 15° 8@9 balls 27 deg

Ask Price of Gen Elec if he
can detect a mechanism
here 2 or 3 miles
further with higher
mechanisms.

Smith to take bright
steel get coated with
Zinc Oxide, then
take out & put in
fresh Gal Sea Water

Ask Dandy for ~~Post~~
Graduate,

John Thomas
Firestone Co
to get rubber -



Have drawn red line from Navassa Island, to Florida, of about or 180 ft water 50 to 100 miles out to sink oil tanks for pirate boats to get supplies oil - work out system of concealed buoys or other devices if copper wire 1/2 mile long automatically from tank with small ball can be dragged for or slight oil leak.

Man who expanded Monel

Joe Osevjowits
Superior Mac & Tool works
165-167 - opening at 4
408 W Broadway NY

514 South 19th Newark

H Rohrdanz 185 W 15th st
Newark - fine work instrument
maker - Can come

Max Buchwald (German)
Elite Dept 236 W 15th st NY
Telefone 5363 Chelsea
Were formerly employed at Lab on
small work Expanded Instrument
maker good on small work -

Think straw oil may
in sponge on Mengyle
absorb the Hydrocarbon
from Explosive gases
If may absorb some

If another 500 Tons BP
low vapor tension ordered
of Trenyal series fuzed
shell absorb nitro, ingredients
+ an altitude high BP
still others -

Bird will get me 1 mal gun

Time fuse for charged poor

Telephone system for warships

tests at target Sunday between
ship & target South
Ranger finder & time
fuse Explosive on target

ship wants to
detected aeroplanes 10
miles away to get gun ready

Often muffler
on Auto or Truck made
[illegible] BP gasoline
+ [illegible] Mixture
[illegible]

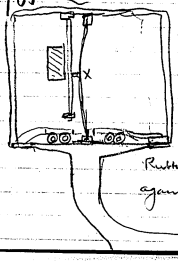
Dr Chas S Hastings
248 Bradley St New
Haven, Brashears Optic
Expert —

~~Get Dennis's reply to Roadt~~
~~& Reply —~~

1340 Selections (seen recorded) & never used
2nd Wanlew barrmade of

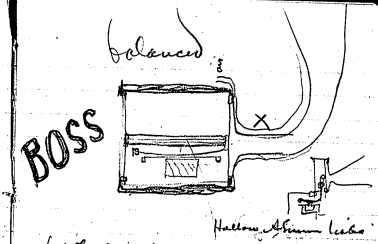
4/35

2-20-17



Best solar
If X gets out
adjustment
raise or lower
funnel to vary
pressure

Ruth to Counteract
against water pressure.



both diaphrm connected
together both under sea pressure
both move together but as
X has freeness only X will
work & have the big waves

Make a 12 ft funnel $\frac{1}{16}$
Brass with 1/4 end 2ft long
not so much flare say 1/2 as
Reg Phono funnel

Rig up bath to plate Iron
Try Plaster Casts works
proofed & grafted get
2 men for this —
+ get all data possible
make Copy of Diesel
on small scale all
Electrical —
Circulate by pump + Vac
filter + get best Collard
also robot —

Oleum Nozzle - Expand with
water with air out of it
to stop break, then try
liquids high viscosity
Want high speed stream,
Carry long distance without
breakdown — Eat up wire
defuse using dilute
acid - Mixed with Viscous
also for combustables

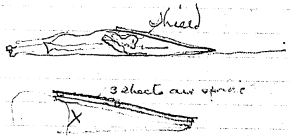
Try Confetti - device for
feeding Viscous spray +
Confetti simultaneously
from Roll of paper to cut in
pieces, — BS Rosin + Castor
make actual Experiment +
therefor our people on
non adhesive stole for
Ohio —

1" gun Maxim feed with
water penetrating head
for Submarine —
high Vel — big Chamber
2900 @ 3000 ft sec

Sharpened Case
Sawed so pieces
would fly pieces
on explosion

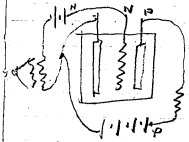
Enough to wound not to Kill

If mud on roads devise travelling mixer with water & cement feeder to make 1/2 the road cement using mud itself. Where act do the other 1/2 for auxiliary sta.



X Space for accumulating drainage on drainage - fake surface action.

amplifier with Aluminum Rectifier



Machinery on large scale for Mechanizing road block for heavy scalping + trucks.
Digger - handling 16 ft wide 3 miles hour - + various machines following with mixers, trucks bring along use fillers largely - stone 1/2 ft thick + grout with cement.
6% grade limit, small trss trestles blue prints for every sign, edge + board for tolls.

in net system, work out way of sending a bomb along net till it contacts with Caught submarine -

---

Roll of Dreadnoughts are about 15 deg
Can fight at least 20 degs ~~are~~ abnormal

Time of roll is always the same 14 to 15 seconds for Complete Cycle

Lobewitz new Mythamuthan
Coil 3 per second rust
fall - long - will it interfere with high voltage
+ also may to solve the problem

A H Pfund John Hopkins College Baltimore -

Jaup - do screen known that lets only ultra violet through but can be very much weakened by Combination of 2 or more screens -

Nothing is better than, arc between rods of iron Hg Vapor arc is very good

following are fairly transparent to ultra violet
1 Dense Cobalt blue glass one of whose sides is coated with gelatin impregnated with Nitrosodimethylaniline
2nd = plate of glass coated quartz heavily silvered
Silver is almost futile

Transparent to wave length 3100 AV

3rd a polished Crystal of Nickel Ammonium Sulphate

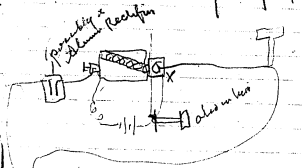
4. A quartz bulb filled with Bromine Vapor

5 a layer of solution of Nickel Ammonium sulphate + $CoSO_4$

Machine gun operation
Use Sun also arc
Throw beam in their Eyes —

Locate Machine gun by sound. quick way to have a known position before a shot on our side at known distance then the Enemys shots recorded on a little hand machine given positions.

projectiles should be provided with a hole for water to get in, so if they make a miss, watcher can see something they Exploding



see if it increases loudness

also dia at X it will emit but can Conjugate —

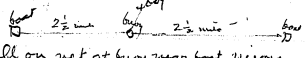
also Crystal detector balls

Also Carbon Balls (has tested fall) Carbon also arc (Length of Carbon 1 inch)

X sent

Reports

1 Extension Ladder X
2 Vision-Homatropin X
3 Smudging periscopes X
4 Turbine head on projectile X
5 Straight smudge beyond firing line X
6 Sound range finder X
7 Smudge better on salt water X
8 Corrosion by sea water Sub M guns X
9 Asking about small boats + Sub M detector system X

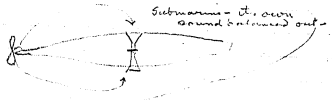


Pull on net at buoy near boat, nets attached, boats immediately slack wrapping net around. This idea can be made automatic or several nets controlled at a distance.

If submarine is changing on top at night & boat 5 or 6 miles away can use sound range finder & get her position & from slightest deviation of sound wave will show on the 3 seconds & these can be used as a base line. Can do this with Dreadnaught of the enemy if can mention in darkest night say 8 to 10 miles away.

Our ships wireless
4 frequencies Synchronous
Motors & send by each
three frequencies the
Machine for changing
on ship + land end
Unison — Secret
Communication —

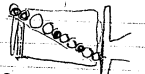
Fund of a submarine submerged
+ Surface must be running
Can stop for 5 seconds to
get sounds so signals could
be perceived



then any outside sound is unsymmetrical
+ works Microphone, great bronze
will be balancing -

Wind a 1/2 dia iron closed ring
1 foot long one layer of wire

See how long the wave is on
opening circuit possibly
second on phone this would
actually measure the wave
Then get a Coil which gives
3 waves per second for
Submarine gives propeller
Trace interruption



Bi-Sb then Silver + so on
in line — also only in
line with 1 Cell around

in induction Coil primary
Secondary has phones
amplify by revoicing
The Thermo pile covering
1 way + strengthen other

plate iron .001 other + make Diaphram
of several thickness for
Bell Transmitter to get
good quality - put bottom
with shellac, dip & dry &
when all absorbed out
put in hydraulic -
Use Rubber rings -

X is piece of paper etc
rubbing on top bridge walls to
Create more scratch + the
Clashing with leg scratch & with
total scratch - Macro

Mechanics
Shooting a projectile a square end
Vertically in water power required
for fixed depth as compared
with steel -

Micro 6000 ohms - working
disturbs up 10% what is best
coil for primary & secondary
using any Receiver, also if a
receiver was say some res as Micro
would it be better to dispense
with the coil - If Micro
was made 60 000 with still 10%
change of Res + Coil change
proportionally would there be less

~~Stop splash when on range finder~~

What about setting January 1 1918
Last day will take back old
style records.

Put a Cut out on telefone receiver
when talking - hurts ears.

Also make pad only over
each telefone on ear

Elastic to
pull up
try have felt
or Rubber

Sumdge X
Hormalopsin X
Submarine funnel Sub detector
Smooth bore projectile small X
Aeroplane "
Flares pale blue
" Palmani
Big funnel & Microphone for ears towards
Wireless
Speaking tube system Warships X
Spotting bag guns by phonograph,
Range finder telescope with parallelogram
Extensions for Superdreadnoughts & modified
one for fast Motor boats,
Compressed air parachute revolving
Camera for observation boats
~~1st aeroplane portable~~
~~funnel extension bag traps G.F.~~
~~Little bang magazine~~
~~Outdoor adaptofair~~
Strontia arc, underseas arc
~~Eccoma from gun~~
Protection of Channel towards
~~pattern anti-aircraft warships~~
Microphone see page back

50 lbs Potatoes Expected.

28½ lbs wood
21½ lbs chalk

Vas
10 lbs Rosin
35 alcohol

10 lbs Rhamate Mg. is assumed
Equals 7½ lbs Lac or Rosin
as the Medallion

Clean gloves of scamp funds

Arizona 100 phones
20 circuits – Ulay
Phones on ch 10,

Reimmerhoff July 22 1915

4000 lbs day cost 27c
Benzol 40c sell beyond 1 cent
ll or $\frac{1}{4}$ cent for reduction
below 27c

Varnish blank
100 grms Resin 160 16% free Phenol
6 Phenol
1 Para
1 Sandrac
7.8 6/4
156 to 200 DZ Nat
$1\frac{1}{2}$ min Vis
5% Camphor Oil

Blank - 4 wood 3 chalk
100 lbs of the mix 14 lbs 5 oz
Lac & 50 lbs Alcohol
$3\frac{1}{2}$ alt. 1 Lac for Rosin
5 alt. 1 Rosin

998 99
20 79
971 20

Pura 8000 lbs in
stock – Feby 1